2.12   **Total Response Days** - The number of days from the date the service provider initiates the request (e.g., MSAG change, mismatch or address discrepancy) to the date the service provider receives the information back from the PSAP and updates the MSAG and/or ALI and SR data bases.

Responsibility: Service Provider and PSAP

Data Element Relationship:

$$\frac{\text{Total Number of Days to Resolution}}{\text{Total Number of Resolutions}} = \frac{\text{Average Number of Days}}{\text{To Resolution}}$$

2.12a **PSAP Response Days** - The number of days from the date the service provider initiates a request to the date the PSAP supplies the information to the service provider .

Responsibility: Service Provider

Data Element Relationship:

$$\frac{\text{Total Number of Days of Response}}{\text{Total Requests}} = \frac{\text{Average Number of Days}}{\text{To Response}}$$

2.12b   **Service Provider Response Days** * - The number of days from the date the service provider receives the PSAP response to the date the service provider accurately updates the MSAG and/or ALI and SR data bases.

Responsibility: Service Provider

* Multiple participating data providers and other factors can affect the total number of response days. Where multiple service providers are involved, additional measurement intervals should be considered.

Data Element Relationship:

$$\frac{\text{Total Number of Days of Response}}{\text{Total Requests}} = \frac{\text{Average Number of Days}}{\text{To Update}}$$

2.13   **Total Inquiry Completion Days** - The number of days from the date that an inquiry situation occurred to the date that the inquiry situation is resolved and the PSAP is notified of the resolution of the inquiry situation.

Responsibility: PSAP

Data Element Relationship:

$$\frac{\text{Total Number of Days Elapsed}}{\text{Total Number of Days}} = \frac{\text{Average Number of Days}}{\text{Elapsed}}$$

2.13a   **PSAP Notification Days** - The number of days from the date that an inquiry situation occurred (ALI failure, ANI failure, wrong display of information) until the date the service provider is notified.

Responsibility: Service Provider

Data Element Relationship:

Total Number of Days to Notify   =   Average Number of Days
Total Notifications   To Notify

2.13b **Service Provider Inquiry Response Days** - The number of days from the date   the service provider is notified of a request for inquiry resolution to the date the inquiry situation is resolved.

Responsibility: Service Provider

Data Element Relationship:

$$\frac{\text{Total Number of Days to Resolution}}{\text{Total Requests}} = \text{Average Number of Days To Resolution}$$

2.14 **Receive ALI Accuracy** - A measure of the accuracy of the ALI information received at the PSAP.

Responsibility: PSAP

Data Element Relationship:

$$\frac{\text{Total Incorrect ALI Retrievals}}{\text{Total ALI Call Retrievals}} = \text{Percentage of Incorrect ALI Call Retrievals}$$

2.15 **Percentage of Misrouted Calls** - 9-1-1 calls that are incorrectly routed to a PSAP that are not due to alternate or default routing conditions.

Responsibility: Service Provider or PSAP

Data Element Relationship:

$$\frac{\text{Total Misrouted Calls}}{\text{Total ALI Call Retrievals Received}} = \text{Percentage of Misrouted Calls}$$

2.16 **Data Base Synchronization**

A. Percentage synchronization between ALI and source data bases. (Recommended time period between data base comparisons is annually.)

Responsibility: Service Provider and Participating Data Provider

B. Percentage synchronization between SR/Tandem and ALI data bases. (Recommended time period between data base comparisons is annually.)

Responsibility: Service Provider and Participating Data Provider

NENA
Recommended Standards
For Local Service Providers

TABLE OF CONTENTS

Prepared by:
National Emergency Number Association (NENA) Data Standards Technical Committee
Multiple Local Service Providers Study Group

INTRODUCTION

1.1 Purpose

This document sets forth NENA standards for all Local Service Providers involved in providing dial tone to end users.

1.2 Copyright and Responsibility

This practice was written by the NENA Data Technical Committee in conjunction with the Multiple Local Service Providers study group. The NENA Executive Board has recommended this practice for industry acceptance and use. For more information about this practice, contact:

> National Emergency Number Association
> 47849 Papermill Road
> Coshocton, OH 43812-9724
> Phone: 800-332-3911
> Fax: 614-622-2090

1.3 Disclaimer

This document has been prepared solely for the voluntary use of 9-1-1 service providers, 9-1-1 equipment vendors, and participating Local Service Providers.

By using this practice, the user agrees that the National Emergency Number Association (NENA) will have no liability for any consequential, incidental, special, or punitive damages that may result.

1.4 Overview

This document defines the provisioning requirements for E9-1-1 data integrity, content, and call delivery regardless of dial tone provider. It is the goal of these standards to support current and future development consistent with the concept of "One Nation, One Number".

1.5 Reason for Reissue

NENA reserves the right to modify this technical reference. When ever it is reissued, the reason(s) will be provided in this paragraph.

1.6   Acronyms/Terms

Acronym/Term	Definition
Alternate Number	The caller's alternate telephone number which is call forwarded to the telephone number in positions 2 through 11 of the NENA Data Exchange Standards Versions 1 & 2.
Automatic Location Information (ALI)	The automatic display of the street address and/or location associated with the telephone number (ANI) which is displayed on a screen at the telecommunicators position.
Automatic Number Identification (ANI)	The automatic display of the telephone number of the calling party at the telecommunicators position.
ALEC	Alternative Local Exchange Carrier Also known as Competitive Local Exchange Carriers (CLECs), Competitive Access Providers (CAPs), and Local Service Providers (LSPs).
Company Identifier	A NENA approved 3-5 character identity chosen by the Local Service Provider that distinguishes the entity providing the dial tone to the end user. The Company Identifier is maintained by NENA in a nationally accessible data base.
Data Exchange	The NENA Data Standards Subcommittee has established 2 versions of standard data formats for use by data exchange partners when exchanging E9-1-1 ALI data base information.
End User	The 9-1-1 caller.
E9-1-1	Enhanced 9-1-1(name, address, and telephone number displayed).
ILEC	Incumbent Local Exchange Carrier
INP	Interim Number Portability
Local Service Provider (LSP)	A term intended to encompass all companies providing dial tone to end users, including but not limited to Incumbent Local Exchange Carriers (ILEC), Alternative Local Exchange Carriers (ALEC) and PBX providers.
Master Street Address Guide (MSAG)	A listing of all streets and number ranges within a 9-1-1 service area. The streets and address ranges are assigned routing codes, or emergency service numbers (ESNs) to enable proper routing of 9-1-1 calls.

1

1.6 Acronyms/Terms cont'd

Acronym/Term   Definition

NENA

National Emergency Number Association - A not for profit association furthering the goal of one nation one number , that number being 911.

Network Reliability Council

A study group made up of experts in the field of networks as they relate to Public Safety Systems charged with studying the reliability of the network and to make recommendations concerning service quality.

North American Numbering Standard

Uses NPA standard of 10 digit number assignment and is administered by Bellcore.

NPA

Number Plan Area (Area Code)

NXX

The prefix of the telephone number.

PBX

A private telephone system that is connected to the public switched telephone network.

Public Safety Answering Point (PSAP)

An answering location for 9-1-1 calls originating in a given area. A PSAP may be designated as primary or secondary, which refers to the order in which calls are directed for answering. Secondary PSAPs receive calls on a transfer basis and generally serve as an answering location for a particular type of emergency call (i.e., Fire or EMS). PSAPs can be located at police, fire or emergency medical service communications centers, or may be located in a specialized centralized communications center which handles all emergency communications for an area. PSAPs may be represented by an agent or agency for data base administration.

Remote Call Forwarding

A permanent call forwarding feature that allows a customer the ability to purchase additional Directory Numbers and have calls to those telephone numbers forwarded to a pre-determined telephone number.

Selective Routing (SR)

This is the routing of a 9-1-1 call by the telephone network to the proper PSAP. Selective routing is accomplished by the ESN which is derived from the customer location information, upon MSAG validation.

Service Provider

The entity(ies) responsible for the ALI system data management and/or retrieval. i.e., a Telephone Company, Data base or Customer Provided Equipment (CPE) vendor, PSAP or County.

1.7   Reasons to Implement and Benefits

Industry adoption of the standard will:
    -Ensure the consistent provision of ALI data
    -Ensure reliable 9-1-1 call delivery
    -Improve communications and remove barriers across entities

1.8   Implementation

How: Use of the standards will provide the basis for agreements between the Local Service Provider and the service provider.

When: Should be used at the time that arrangements are being made between the Local Service Provider and the service provider.

See also related standards document NENA 06-001, NENA Recommended Standards for Local Service Provider Interconnection Information Sharing.

1.9 Acknowledgments

The standards have been created through the cooperative efforts of:

NENA Data Technical Committee - Judy Cortiana Chairperson

Multiple Local Service Providers Study Group

Judy Cortiana	Pacific Bell Chariperson
Anne Berman	NYNEX
Terry Bradshaw	Sprint
Lynn Chancellor	BellSouth
Dan Cowen	GTE South
Stan Czolowski	NYNEX
Patti Fischer	Pacific Bell
Charley Foster	NYNEX
Vicki Frymire	Pacific Bell
Joseph Gondek	NYNEX
Judy Graham	Time Warner Comm.
Shirley Grant	GTE
Phil Hollar	MCI
Beverly Hood	Sprint
Ron Huelsing	Southwestern Bell
Bill Johnson	CONTEL
Susan Johnston	Ameritech
Doug Kennedy	BellSouth
Doug Kroupa	AT&T
Carolyn Maddox	Sprint
Bill Marczak	BellSouth
Enoch Morris	ALLTEL
Scott Nickels	Plant Equipment
Greg Schiller	NYNEX
Thom Selleck	TCG
Tina Tsu	NYNEX
Steve Wisely	NYNEX

ALEC Database Issues Study Group

Larry Ciesla	Lucent Technologies
Judy Cortiana	Pacific Bell
Stephen Fitzgerald	MFS
Judy Graham	Time Warner Comm.
Shirley Grant	GTE
Tom Hicks	GTE
Phil Hollar	MCI

1

Kenneth Lauria   KML
Rebecca Leikheim   Trace Inc.
Carolyn Maddox   Sprint
Bert McDonald   Sprint
Jutta Roeder   HBF
Larry Thompson   GTE

STANDARDS

1.1   9-1-1 data for Local Service Providers(LSPs) will be integrated into existing Automatic Location Identification / Selective Routing (ALI/SR) systems.

1.2   NENA-02-001 NENA Recommended Formats for Data Exchange will be met for data exchange, format and content. NENA-02-003 NENA Recommended Protocols for Data Exchange will be followed for transmission protocol.

1.3   All telephone number records must be Master Street Address Guide (MSAG) valid and meet all components of the NENA-02-004 NENA Recommended Measurements for Data Quality.

1.4   New services and features will not degrade the existing quality of the E9-1-1 System.

1.5   The LSP is responsible for directing 9-1-1 traffic from each of its end offices to the appropriate 9-1-1 selective router or PSAP as negotiated with the 9-1-1 Service Provider.

1.6   All LSPs are responsible for network management of their network components in compliance with the Network Reliability Council Recommendations.

1.7   All LSPs must meet the network standard of the E9-1-1 Service Provider for 9-1-1 call delivery.

1.8   The Local Service Provider's numbering plan follows the North American numbering standard.

1.9   Date Changes submitted by the LSP will be processed by the 9-1-1 Service Provider's system following the NENA 02-004 NENA Recommended Measurements for Data Quality. "Processed" includes being capable of selective routing and PSAP display.

1.10   Any changes made to an MSAG i.e., ESN, Street, or Community name change, will be applied to all affected telephone number records within the ALI database.

1.11   When existing MSAGs are used to validate LSP telephone number records, the 9-1-1 Service Provider will negotiate the provision of a listing of valid street address information to the Local Service Provider.

1.12   Addresses not recognized by the local addressing authority will be negotiated between the LSP and the addressing authority for MSAG inclusion.

1

STANDARDS continued

1.13 To meet the needs of Interim Number Portability, service is provided via a Remote Call Forwarding arrangement. The Local Service Provider will send both numbers in the data exchange to the 9-1-1 Service Provider for a labeled display at the PSAP. It is further recommended that the label "ALT#" be used for consistent display at the PSAP. The Local Service Provider will populate the Remote Call Forwarding number in the NENA-02-001 NENA Recommended Formats for Data Exchange reserved field positions:
- Version 1 positions 227-236
- Version 2 positions 356 through 365

The service provider will attach the label "ALT #" for the ALI display.

1.14 The LSP will send the actual ANI from their switch through the network, not the Remote Call Forwarded number.

1.15 The Company Identifier field in the NENA-02-001 NENA Recommended Formats for Data Exchange versions 1 and 2 should be used to identify the Local Service Provider. Data in this field should be stored in the ALI database and be available for display at the PSAP. Display of this data should be controlled by each 9-1-1 district with consideration given to the capability of the PSAP equipment to display the data.

1.16 LSP data should be transferred to the 9-1-1 Service Provider electronically, following the NENA-02-003 NENA Recommended Protocols for Data Exchange, with attention paid to network security to ensure data reliability.

1.17 It is the responsibility of the LSP to notify the 9-1-1 Service Provider of new or additional NPA NXX assignments prior to the establishment of 9-1-1 data exchange.

1.18 It is recommended that the 9-1-1 Service Provider in the area affected by an NPA split, lead and coordinate the 9-1-1 conversion effort. The capability of the 9-1-1 Service Provider will dictate the method for converting the ALI database, which may require reloads of telephone number data and/or ALI database conversion. All LSPs in the affected area must participate in the planning process to provide lists of their prefixes and agree upon dates for the conversion of their databases and subsequent update requests. The 9-1-1 Service Provider should notify the PSAPs as well as coordinate required changes within the E9-1-1 tandem switches.

1.19 It is recommended that all LSPs allow caller information to be retrieved based upon the ANI generated by the switch as well as the ported number. This will depend upon the capabilities of the 9-1-1 Service Provider's software and database where reverse lookups are permitted by regulatory entities.

1.20 9-1-1 data included for exchange or storage for ALI retrieval should not include telephone numbers for non-generating dial tone classes of service.

Standards continued

1.21   The LSP responsible for establishing telephone service and billing records for the end user is also responsible for providing the ALI data to the 9-1-1 Service Provider. Various methods may be employed to update the ALI data base and depend upon agreements between LSPs and 9-1-1 Service Providers, with attention paid to state legislative requirements.

1.22   Periodic reconciliation of the 9-1-1 data base with the originator's data base is recommended as specified in the NENA-02-004 NENA Recommended Measurements for Data Quality.

1.23   Confirmation of data transactions from the LSP to the 9-1-1Service Provider will be made available to the LSP. The confirmation will include the information from the populated fields of each specific transaction, the error code(s) if update was not successful, and statistical data of the total number of records received, processed, accepted and rejected.

1.24   The 9-1-1 Service provider may provide data base extracts containing LSP telephone number data to PSAPs for inclusion in on-premise ALI databases or LSP address information for inclusion in CAD systems.

1.25   The 9-1-1 Service Provider shall restrict the usage of LSP data to emergency purposes as mandated by legislation. LSP data shall not be provided to other entities without the written permission of the LSP.